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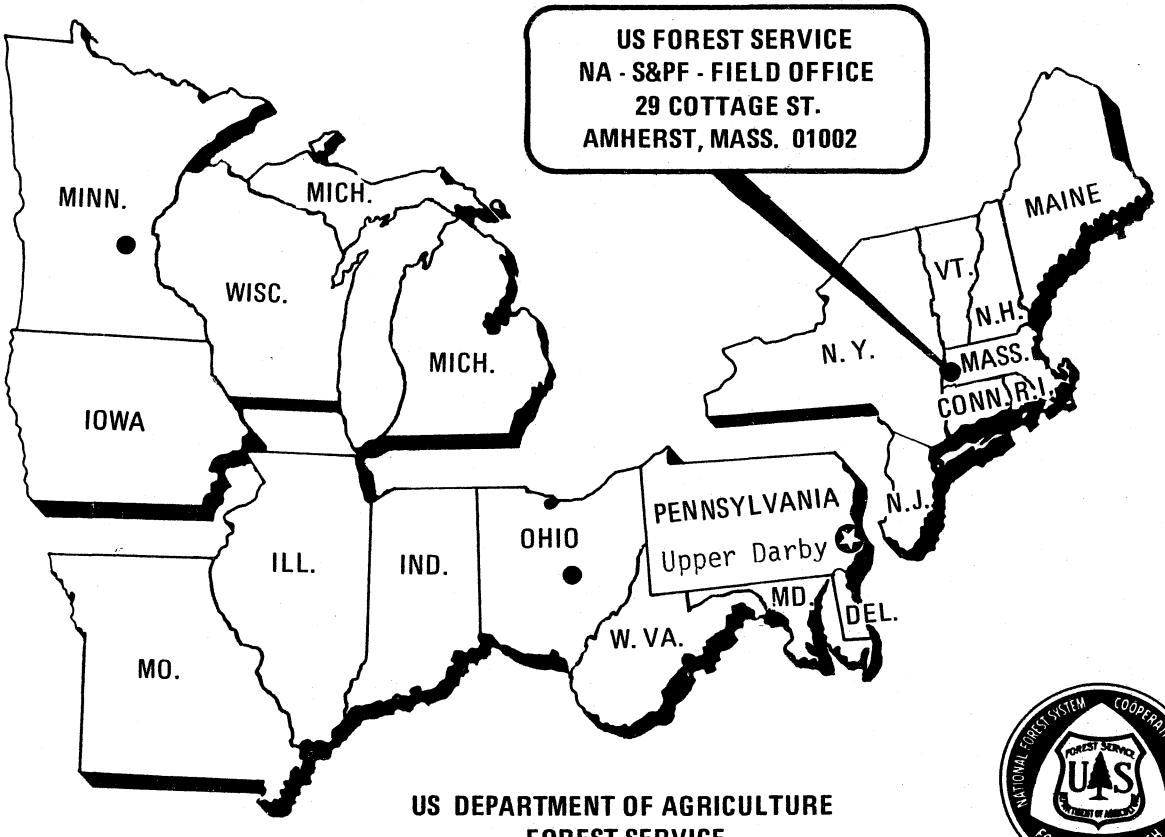
DIVISION OF FOREST PEST CONTROL

Northeastern Area State & Private Forestry

A-70-6 5210

FOREST INSECT AND DISEASE PREVENTION REPORT SILVER LAKE RECREATION AREA GREEN MOUNTAIN NATIONAL FOREST

by
James S. Hadfield
Robert P. Ford
March 1970



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A-70-6 5210

PREVENTION REPORT

The Potential for Serious Forest Insect and Disease Problems on the Proposed Silver Lake Recreation Area, Middlebury Ranger District, Green Mountain National Forest

by

James Hadfield, Pathologist
Robert P. Ford, Entomologist

March 1970

INTRODUCTION

Plans have been made to develop a recreation area around Silver Lake near Fernville, Vermont. The proposed recreation area is entirely within the boundaries of the Middlebury Ranger District of the Green Mountain National Forest. In August 1969, James Hadfield and Robert P. Ford examined the site to detect insects and diseases present and determine the potential for serious outbreaks that could have detrimental effects on recreational values. Recommendations are made for preventing losses due to forest insects and diseases.

METHODS

A detailed ground survey was made of the woodland along the eastern and northern shores of Silver Lake where the major recreation facilities will be located. Notes were made of the forest type and tree size, present insect and disease conditions, and the potential for serious outbreaks of pests.

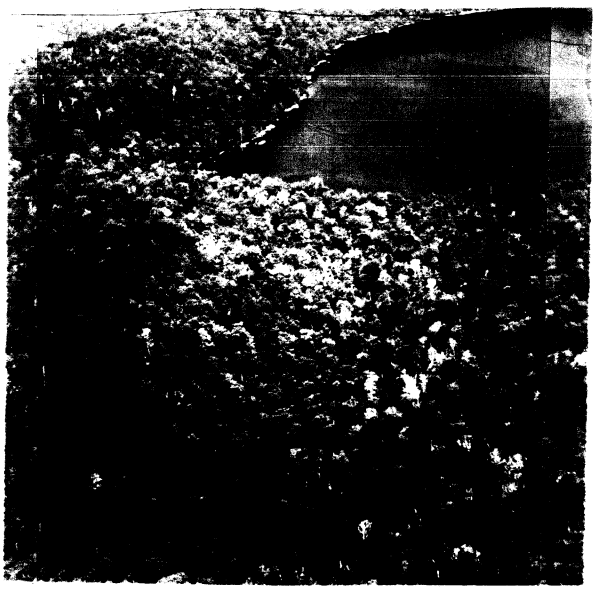
Aerial photographs of the area were taken during pest detection flights conducted in August, 1969. Two examples of these photographs are on the preceding page.

RESULTS

The attached map of the proposed recreation site shows that we divided the area into eight regions based on tree species and size groups.

Region I

Tree Species:	Yellow Birch, White Birch, Moosewood, Red Maple, Choke Cherry, Beech, Sugar Maple, Hemlock, and Ash. (See "Nomenclature and Definitions" in APPENDIX)
Size Classes:	Saplings, some scattered poles
Present Pests:	Beech bark disease, maple leaf cutter
Potential Pests:	The maple leaf cutter is of little consequence. Beech bark disease will kill infected trees. Defoliation by forest tent caterpillar and saddled prominent possible, but the risk is low.



1. Southeast of Silver Lake. The dead trees have been killed by beech bark disease. The yellow and brown trees in the bottom of the photo are dying.

2. Southern end of Silver Lake. The severity of beech bark disease in this area is worsening.

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Region II

Tree Species:	Northern Hardwoods, Hemlock, Red Spruce, Oak
Size Classes:	Poles except spruce which are seedlings
Present Pests:	Beech bark disease, maple leaf cutter, beaver, some decadent oak with dead limbs, oak leaf skeletonizer, spruce galls, sapsucker damage to hemlock.
Potential Pests:	Oak trees are high risk because of defoliators, such as gypsy moth and skeletonizers. Dead limbs create a safety problem. Spruce galls and maple leaf cutter are of no serious consequence. Beech bark disease will kill most of the beech. Sapsucker damage is of no major concern.

Region III

Tree Species:	Beech, Sugar Maple, White Birch, and Red Oak.
Size Classes:	Standards and veterans
Present Pests:	Beech bark disease, Poria obliqua canker rot on birch, old sugar maple borer damage, maple leaf cutter, and decadent oak.
Potential Pests:	Most beech trees will die. Falling trees (overmature birch and oak) may be common as limbs and stems rot. Sugar maple borer will likely increase when stand is opened. The Region is susceptible to forest tent caterpillar and saddled prominent defoliation. Armillaria mellea root and butt rot can be expected to kill some birch. Bark-peeling by tourists will give the bark an unsightly appearance.

Region IV

Tree Species:	Sugar Maple, White Birch, Beech, Red Oak, Hemlock, White Pine, Red Spruce.
Size Classes:	Standards and veterans

Present Pests: Some spruce dying from unknown cause, decadent oak, butt rot of birch, beech bark disease, and maple leaf cutter.

Potential Pests: Beech will die from beech bark disease. Soil compaction may have detrimental effects on hemlock. Insects should not pose a primary threat. Large, overmature oak and birch may present a safety problem.

Region V

Tree Species: Red Spruce, Red Oak, White Pine, White Birch, White Cedar, Beech

Size Classes: Poles and standards

Present Pests: Some red spruce is dying from an unknown cause. White pine is infected with Polyporus schweinitzii. The white birch is old, decadent, and butt rot is common. Red oak are decadent. Beech bark disease is causing some mortality.

Potential Pests: Beech bark disease will continue to kill beech. Infected white pine may break off in high winds. Ips pini bark beetles may infest broken or lightening-struck white pine, but will probably not infest surrounding trees. White birch and oaks may die in another ten to fifteen years because of age and decays.

Region VI

Tree Species: White Birch, Red Spruce, White Pine

Size Classes: Poles and standards

Present Pests: White birch has been bark-peeled by tourists, and is infected with butt rot. Some red spruce is dying from an unknown cause.

Potential Pests: Tourists damage to birch will intensify. Birch may break during storms as butt rot weakens them. P. schweinitzii may spread to white pine.

Region VII

Tree Species: Aspen, Sumac, White Pine, Beech, White Birch

Size Classes: Saplings

Present Pests: Hypoxylon canker of aspen, bark peeling of birch by tourists, beech scale, white-pine weevil, cone beetle in white pine.

Potential Pests: White-pine weevil will continue, but will not be an aesthetic problem. Birch bark peeling may kill some birch. Beech bark disease will cause beech mortality along the beach. The stand is susceptible to forest tent caterpillar and other defoliators.

Region VIII

Tree Species: White Birch, Sugar Maple, Beech, White Pine, Hemlock

Size Classes: Standards and veterans

Present Pests: Armillaria mellea butt rot in white birch, Sugar maple infested with sugar maple borer, maple leaf cutter, and gnawed by porcupines. Porcupine damage and beech bark disease in beech.

Potential Pests: Beech bark disease will intensify and kill most large beech. Soil compaction may injure the hemlock. Saddled prominent and forest tent caterpillar may infest this stand when state-wide outbreaks occur.

DISCUSSION

Insects and diseases are numerous in the proposed recreation area. However, the only major pest problem at the present time is the beech bark disease. Examples of beech mortality caused by this disease can be seen in accompanying aerial photographs. Many white pine and white birch are over-mature as indicated by their size and the amount of decay. Most of the oak and white birch are physiologically over-mature and are beginning to decline in vigor. The red spruce mortality is an unsolved problem, but is probably a physiological phenomenon.

Most of the insects now present and expected to be present, except the beech scale, will be of little consequence over the long run. Temporary build-up of defoliating insects can be expected from time to time, but this will amount to only an inconvenience. The wide variety of tree species in this area greatly reduces the susceptibility of the woodland to insect outbreaks. Selection of the proper pesticide and method of application can be difficult near bodies of water, but because of the variety of species and age classes of the trees, involved, it is doubtful if such a selection will ever be necessary.

RECOMMENDATIONS

Insects and diseases should not be a deterrent to developing Silver Lake as a recreation complex. However, before facilities are erected, foresters should remove trees that are safety hazards. Increment cores should be taken at stump height from the large white pine. A brown powdery decay means the trees are infected by Polyporus schweinitzii and should be removed. Large white pine, red oak and white birch trees should be tested for soundness before the area is opened for recreational use.

APPENDIX

Nomenclature and Definitions

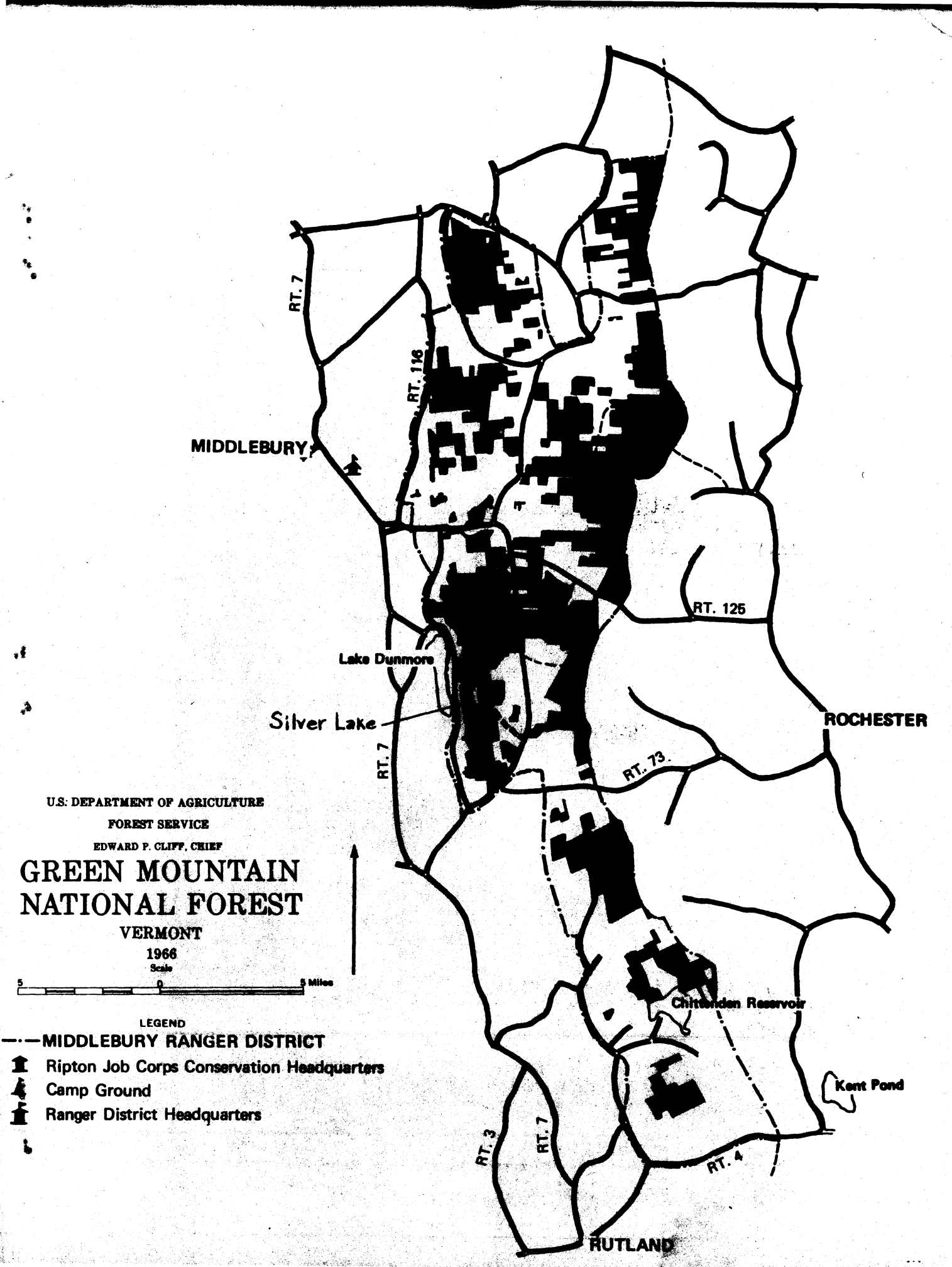
Red Oak,	Quercus rubra
White Pine,	Pinus strobus
White Birch,	Betula papyrifera
Hemlock,	Tsuga canadensis
Red Spruce,	Picea rubens
Aspen,	Populus tremuloides
Beech,	Fagus grandifolia
Sumac,	Rhus typhina
Sugar Maple,	Acer saccharum
Red Maple,	Acer rubrum
Moosewood,	Acer pennsylvanicum
Ash,	Fraxinus americana
Choke Cherry,	Prunus virginiana

Maple Leaf Cutter,	Paraclemensia acerifoliella
Beech Bark Disease,	Beech scale (Cryptococcus fagi) and Nectria (Nectria coccinea var. faginata)
Forest Tent Caterpillar,	Malacosoma disstria
Saddled Prominent,	Heterocampa guttivitta
Oak Leaf Skeletonizer,	Bucculatrix ainsliella
Spruce Galls,	Chermes abietis
Gypsy Moth,	Porthetria dispar
Sugar Maple Borer,	Glycobius speciosus
Bark Beetle,	Ips pini
White Pine Weevil,	Pissodes strobi
Cone Beetle,	Conophthorus coniperda

Beaver,	Castor canadensis
Sapsucker,	Sphyrapicus varius
Porcupine,	Erethizon dorsatum
Tourist,	Homo sapiens

Shoestring Root Rot,	Armillaria mellea
Butt Rot,	Polyporus schweinitzii
Canker Rot,	Poria obliqua
~~Canker on Aspen,~~	Hypoxylon pruinatum

Seedling - A tree less than one inch in diameter breast high
Sapling - A tree one inch to four inches in diameter breast high
Pole - A tree four and one tenth inches to twelve inches in diameter breast high
Standard - A tree twelve and one tenth inches to twenty-four inches in diameter breast high
Veteran - A tree more than twenty-four inches in diameter breast high
Decadent Tree, - A tree with dead and dying limbs, slow growth, and rot.
Physiologically mature, - A tree that has reached the maximum age of its species.


RT. 7
RT. 116
MIDDLEBURY
RT. 125
Lake Dunmore
Silver Lake
ROCHESTER
RT. 7
RT. 73
Chittenden Reservoir
Kent Pond
RT. 3
RT. 7
RT. 4
RUTLAND
U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
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GREEN MOUNTAIN NATIONAL FOREST
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MIDDLEBURY RANGER DISTRICT
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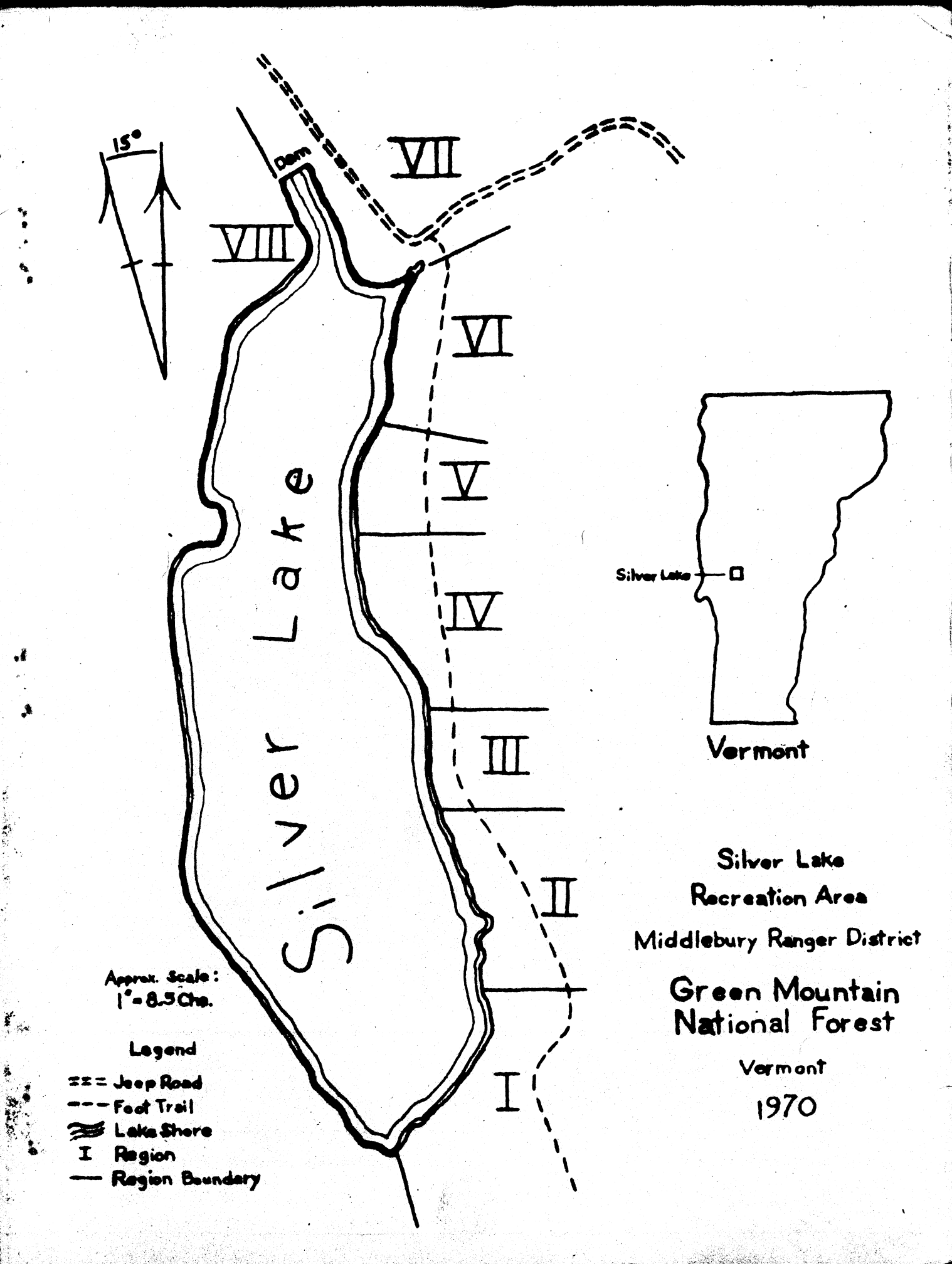
Camp Ground
Ranger District Headquarters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Silver Lake
Silver Lake
Vermont
Approx. Scale:
1" = 8.5 Chs.
Legend
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Foot Trail
Lake Shore
I Region
Region Boundary
Silver Lake
Recreation Area
Middlebury Ranger District
Green Mountain
National Forest
Vermont
1970